This section was prepared by RMC Water and Environment.

3B.2 AIR QUALITY – WATER

3B.2.1 AFFECTED ENVIRONMENT

The "Water" Study Area lies within the Sacramento Valley Air Basin (SVAB). The climate of the SVAB is Mediterranean in character, with mild, rainy winter weather from November through March and warm to hot, dry weather from May through September. The topographic features giving shape to the Air Basin are the Coast Range to the west, the Sierra Nevada to the east, and the Cascade Range to the north. These mountain ranges channel winds through the Air Basin but also inhibit dispersion of pollutant emissions.

The Sacramento Valley is subject to eight unique wind patterns, which are described in more detail in Section 3A.2, "Air Quality – Land," and the Sacramento Metropolitan Air quality Management District's (SMAQMD) State CEQA Guidelines, 2004. The seasonal vertical and horizontal movement of air is an important atmospheric component involved in the dispersion and subsequent dilution of air pollutants. Without movement, air pollutants can collect and concentrate in a single area, increasing associated health hazards. For instance, in the winter months, the SVAB typically experiences calm atmospheric conditions that lead to the formation of fog. These calm conditions result in stagnation of basin air and increased air pollution. As a result, persistent inversions occur frequently in the SVAB, especially during late fall and early spring and act to restrict vertical dispersion of pollutants released near ground level.

CRITERIA AIR POLLUTANTS

From a regulatory standpoint, the air pollutants of most concern within the "Water" Study Area are ozone, nitrogen oxide (NO_X), carbon monoxide (CO), reactive organic gasses (ROG), and particulate matter (PM).

As described in more detail in Section 3A.2, "Air Quality – Land," the regulation of air pollutants is achieved through both national and state ambient air quality standards and emission limits for individual sources of air pollutants. As required by the Federal Clean Air Act (CAA), the EPA has identified criteria pollutants and established National Ambient Air Quality Standards (NAAQS or national standards) to protect public health and welfare. NAAQS have been established for ozone, CO, nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter equal to or less than 10 microns (PM_{10}), particulate matter less than 2.5 microns ($PM_{2.5}$), and lead (Pb). PM_{10} is also known as respirable particulate and $PM_{2.5}$ is also known as fine particulate. These pollutants are called "criteria" air pollutants because standards have been established for each of them to meet specific public health and welfare criteria.

The NAAQS are defined as the maximum acceptable concentration that may be reached, but not exceeded more than once per year. California has adopted more stringent ambient air quality standards for most of the criteria air pollutants with the California Ambient Air Quality Standards (CAAQS or state standards). Table 3.A2-1 provides a summary of the NAASQ and CAAQS standards.

TOXIC AIR CONTAMINANTS

Toxic Air Contaminants (TACs) are pollutants that are associated with acute, chronic, or carcinogenic effects but for which no ambient air quality standard has been established or, in the case of carcinogens, is appropriate. As provided in Section 3A.2, "Air Quality – Land," PM_{10} emissions from diesel fueled engines are some of the greatest TACs of concern.

ODORS AND NUISANCES

Though offensive odors from stationary sources rarely cause any physical harm, they still remain unpleasant and can lead to public distress generating citizen complaints to local governments. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors. The operation of water conveyance and treatment facilities are not known to be significant sources of objectionable odors.

NATURALLY OCCURRING ASBESTOS

Airborne asbestos presents an inhalation hazard because the fibers can enter the lungs and in some cases result in lung cancer, asbestosis and mesothelioma. Levels and types of asbestos minerals vary with the rock and with location: some serpentinite may not contain harmful asbestos while others may contain a high percentage. Asbestos fibers are potentially harmful when they are airborne, therefore, asbestos sources that are friable and pulverized are considered more of a health risk than solid, non-friable sources.

Naturally occurring asbestos has been identified in proximity to the Bear Mountain Fault Zone within eastern Sacramento County (Wagner et al. 1981; Churchill et al. 2000). Based on a review of maps produced by the California Geological Survey, the "Water" Study Area does not overlap with any geologic formations known to contain naturally occurring asbestos.

SENSITIVE RECEPTORS

Some receptors are considered more sensitive than others to air pollutants. The reasons for greater than average sensitivity include preexisting health problems, proximity to emissions source, or duration of exposure to air pollutants. Schools, hospitals and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people and the infirm are more susceptible to respiratory distress and other air quality-related health problems than the general public. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, with associated greater exposure to ambient air quality.

As provided in Chapter 2, "Alternatives," physical improvements are only proposed within Zone 4 of the "Water" Study Area; whereas no physical improvements are proposed within Zones 1, 2, and 3. In this context, emphasis in terms of the affected environment is placed on sensitive receptors located within Zone 4 of the "Water" Study Area. Sensitive receptors within Zone 4 are primarily located within urban areas along raw and/or treated water conveyance alignments and consist of agricultural residences, low- and-medium-density residences, and schools. No sensitive receptors are currently located within the immediate vicinity of the water treatment plants (WTP). However, medium and high-density residential uses are planned in close proximity, as close as 50 feet, to the western perimeter of the Folsom Boulevard WTP site. Likewise, the conveyance pumping facilities, if constructed at the North Douglas Tanks, would be operated in close proximity to planned residences within the Sunridge Specific Plan area and North Douglas communities, respectively.

Conveyance alignments under Off-site Water Facility Alternative 2, 2A, 3, 3A, 4, and 4A would cross through a poverty census block and is discussed further in Section 3B.6, "Environmental Justice – Water."

3B.2.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

The following State plans, policies, regulations, and laws related to air quality are relevant to the Off-site Water Facility Alternatives, and are described in detail in Section 3A.2, "Air Quality – Land:"

- Federal Clean Air Act, administered by the U. S. Environmental Protection Agency (USEPA)
- Federal Hazardous Air Pollutant Program

No other Federal plans, policies, regulations, or laws are applicable to the Off-site Water Facility Alternatives under consideration.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

The following State plans, policies, regulations, and laws related to air quality are relevant to the Off-site Water Facility Alternatives, and are described in detail in Section 3A.2, "Air Quality – Land:"

- California Clean Air Act (CCCA), administered by the California Air Resources Board (ARB)
- State Toxic Air Contaminant Programs

No other State plans, policies, regulations, or laws are applicable to the Off-site Water Facility Alternatives under consideration.

Regional and Local Plans, Policies, Regulations, and Laws

The following local and regional plans, policies, regulations, and laws related to air quality are relevant to the Off-site Water Facility Alternatives, and are described in detail in Section 3A.2, "Air Quality – Land:"

- Guide to Air Quality Assessment in Sacramento County, prepared by the Sacramento Metropolitan Air Quality Management District (SMAQMD)
- Sacramento Metropolitan Air Quality Management District Rule 201: General Permit Requirements; Rule 402: Odors; Rule 403: Fugitive Dust; and Rule 442: Architectural Coatings.
- Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan
- Sacramento County General Plan
- City of Folsom General Plan

City of Rancho Cordova General Plan

The following policies contained in the Air Quality Element of the City of Rancho Cordova's General Plan would be applicable to Off-site Water Facilities:

- **Policy AQ.1.1** – Coordinate with responsible agencies and other jurisdictions to improve air quality within Rancho Cordova and the greater Sacramento region.
- **Policy AQ.1.2** – Evaluate projects for compliance with State and federal ambient air quality standards and the Sacramento Metropolitan Air Quality Management District's (SMAQMD) thresholds of significance. (Refer to Table AQ-3 in this Element for ambient air quality standards.)
- **Policy AQ.1.5** – Require odor impact analyses be conducted for evaluating new development requests that either could generate objectionable odors that may violate SMAQMD Rule 402 or any subsequent rules and regulations regarding objectionable odors near sensitive receptors or locate new sensitive receptors near existing sources of objectionable odors. Should objectionable odor impacts be identified, odor mitigation shall be required in the form of setbacks, facility improvements or other appropriate measures.

- **Policy AQ.2.4** – Maximize air quality benefits through selective use of landscaping vegetation that is low in emission of volatile organic compounds, and through re-vegetation of appropriate areas.

- **Policy AQ.2.5** – Utilize the guidelines in the California Air Resources Control Board Air Quality and Land Use Handbook: A Community Health Perspective when evaluating new development requests that either would generate toxic air contaminant emissions near sensitive receptors or locate new sensitive receptors near existing sources of air toxic emissions or order to minimize health hazards, and implement all feasible best available control technology, as required by SMAQMD.

- **Policy AQ.3.2** – Promote mass transit as an alternative to single-occupant motor vehicle travel.

- **Policy AQ.4.1** – Promote improved air quality benefits through energy conservation measures for new and existing development.

3B.2.3 Environmental Consequences and Mitigation Measures

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. For the purposes of this analysis, air quality impacts would be considered significant if construction and operation of the Off-site Water Facilities would:

- conflict with or obstruct implementation of the applicable air quality plan;

- violate any air quality standard or contribute substantially to an existing or projected air quality violation;

- result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors);

- expose sensitive receptors to substantial pollutant concentrations; or

- create objectionable odors affecting a substantial number of people;

Significance Criteria for Evaluating Toxic Air Contaminant Emissions

California Office of Environmental Health Hazard Assessment (OEHHA) defines a “no significant risk level” to have a potential cancer risk of no more than 10 in 1,000,000 when addressing risks under the Proposition 65 Regulation (OEHHA 1994). The California Air Toxics “Hot Spots” regulation (AB 2588) does not specify a significance threshold, but it requires public notification if the maximum incremental risk from a facility exceeds 10 in 1,000,000. No notification is required if the incremental risk is less than 10 in 1,000,000. This same risk level is also used by the SMAQMD for approval of facilities, with toxic Best Available Control Technology (BACT) being required for facilities with a cancer risk greater than 1 in 1,000,000. Based on these risk levels, the following thresholds are applied for the evaluation of TACs:

- probability of contracting cancer for the Maximally Exposed Individual (MEI) equals to 10 in one million or more, or

- ground-level concentrations of non-carcinogenic toxic air contaminants would result in a Hazard Index equal to or less than one for the MEI.

ANALYSIS METHODOLOGY

Off-site Water Facility-related air quality impacts generally fall into two categories, temporary, short-term impacts during construction, and long-term impacts during project operation. Construction activities would affect local particulate concentrations primarily because of fugitive dust emissions and fine particulates. The construction of the Off-site Water Facility Alternatives would also result in increased ROG and NO_X emissions from construction equipment. During the operations phase, Off-site Water Facility-related motor vehicle trips would also contribute to local and regional emissions. Modeling methodologies used in quantifying construction and operational emissions are described in the following discussion. Additional information and model results are presented in Appendix M-IV.

Construction emissions were estimated following the SMAQMD Guide to Air Quality Assessment in Sacramento County and using the Urban Emissions Model (URBEMIS) 2007 version 9.2.4. URBEMIS 2007 was used to quantify off-road equipment construction and vehicle trip emissions associated with pumping stations and the WTP. SMAQMD's roadway construction model was used to estimate emissions from construction of the Off-site Water Facility Alternative conveyance components. Construction fugitive dust emissions (PM_{10}) were calculated for disturbed soil. Consistent with the URBEMIS user's guide, it was assumed that 25% of the total acres disturbed for each construction phase would represent the maximum daily acres disturbed. Construction emissions associated with the Off-site Water Facility Alternatives were estimated under the assumption that up to three construction crews would be working simultaneously. A summary of the construction information used and URBEMIS outputs is included in Appendix M-IV.

It was assumed that the conveyance components under the Off-site Water Facility Alternatives would be constructed concurrently in 2011 to create a possible worst-case scenario to be used for evaluation purposes. Construction of the WTP was added in 2012. As provided in Chapter 2, "Alternatives," the City assumes that, on average, these scenarios could result in up to three construction crews being active at any one time. Based on the parameters set in Chapter 2, "Alternatives," the City estimates that the Off-site Water Facilities would generate up to 50 haul truck trips per day and 66 worker roundtrips per day. These trips would be dispersed on the roadway network to each of the facility construction sites. Trucks traveling to and from the construction sites would include dump trucks to transport excavated material, flatbed semi trucks, and trailers to transport pipes, concrete ready-mix trucks to transport controlled fill and concrete, and other miscellaneous trucks to support construction activities.

The calculated estimates were then compared to the 85-pounds-per-day construction threshold for NO_X, 65 pounds per day operational threshold for NO_X or ROG, 150 pounds per day threshold for PM_{10}, and 550 pounds per day for CO. As mentioned earlier, as the "Water" Study Area is either attainment or unclassified with respect to CO, SO_2, NO_2, sulfates, lead and H2S, and as the Off-site Water Facility Alternatives would not result in substantial emissions of these pollutants, these pollutants are not evaluated further.

In evaluating potential impacts to sensitive receptors within the "Water" Study Area, the City has also considered approved, future projects that are currently not constructed, but proposed in close-proximity to one or more of the Off-site Water Facility Alternatives. This approach allows for the evaluation of planned land uses that may not be captured in existing environmental conditions.

ISSUES NOT DISCUSSED FURTHER IN THIS EIR/EIS

Implementation of the applicable air quality plan—The Off-site Water Facility Alternatives are the result of a projected water supply demand for the Folsom SPA and, for this reason, the "Water" sections of the EIR/EIS do not discuss the consistency of the Folsom Specific Plan with local air quality plans and policies. Rather, "Water" sections of Chapter 3 address potential off-site changes in land use as a result of facilities proposed in Chapter 2, "Alternatives." Further discussion of the Folsom Specific Plan's consistency with applicable land use plans is provided in Section 3A.2, "Air Quality – Land." Based on those actions described in Chapter 2, "Alternatives,"

the Off-site Water Facility Alternatives do not in themselves propose any substantial change in land use that could otherwise conflict with or obstruct implementation of the applicable air quality plan. In this context, **no direct** or **indirect impact** would occur.

IMPACT ANALYSIS

Impacts that would occur under each of the Off-site Water Facility Alternatives are identified as follows:

NCP (No USACE Permit Alternative)

PA (Proposed Off-site Water Facility Alternative)

1 (Off-site Water Facility Alternative 1 – Raw Water Conveyance – Gerber/Grant Line Road Alignment and White Rock WTP)

1A (Off-site Water Facility Alternative 1A Raw Water Conveyance – Gerber/Grant Line Road Alignment Variation and White Rock WTP)

2 (Off-site Water Facility Alternative 2 Treated Water Conveyance – Douglas Road Alignment and Vineyard SWTP)

2A (Off-site Water Facility Alternative 2A Treated Water Conveyance – Excelsior Road Alignment Variation and Vineyard SWTP)

2B (Off-site Water Facility Alternative 2B Treated Water Conveyance – North Douglas Tanks Variation and Vineyard SWTP)

3 (Off-site Water Facility Alternative 3 Raw Water Conveyance – Excelsior Road Alignment and White Rock WTP)

3A (Off-site Water Facility Alternative 3A Raw Water Conveyance – Excelsior Road Alignment Variation and White Rock WTP)

4 (Off-site Water Facility Alternative 4 Raw Water Conveyance – Easton Valley Parkway Alignment and Folsom Boulevard WTP)

4A (Off-site Water Facility Alternative 4A Raw Water Conveyance – Easton Valley Parkway Alignment Variation and Folsom Boulevard WTP).

The impacts for each alternative are compared relative to the PA at the end of each impact conclusion (i.e., similar, greater, lesser).

IMPACT 3B.2-1 Generation of Construction Emissions of NO_X and PM_{10}. *Construction of the Off-site Water Facility Alternatives would produce construction-generated emissions of NO_X, an ozone precursor, and fugitive PM_{10} dust would exceed SMAQMD-recommended thresholds and would substantially contribute to emissions concentrations that exceed the NAAQS and CAAQS. Thus, project-generated, construction-related emissions of criteria air pollutants and precursors could violate or contribute substantially to an existing or projected air quality violation and/or expose sensitive receptors to substantial pollutant concentrations.*

NCP, PA, 1, 1A, 3, 3A, 4, and 4A

Construction activities associated with the Off-site Water Facilities would occur in two distinct phases: Phase I involves site preparation and earthmoving activities, while Phase II involves installing equipment, concrete, and structural improvements. Site preparation includes activities such as general land clearing and vegetation removal. Earthmoving activities include cut and fill operations, trenching, soil compaction, and grading. General construction includes adding improvements such as roadway surfaces, well and pump structures, and storage and treatment facilities. The emissions generated from these common construction activities include:

- dust (including PM_{10} and $PM_{2.5}$) primarily from fugitive sources such as soil disturbance and vehicle travel over unpaved surfaces;

- combustion emissions of criteria air pollutants (including ROG, NO_X, PM_{10}) primarily from operation of heavy equipment construction machinery (primarily diesel operated), portable auxiliary equipment and construction worker automobile trips (primarily gasoline operated); and,

- evaporative emissions (ROG) from asphalt paving and architectural coating applications.

Construction-related fugitive dust emissions would vary from day to day, depending on the level and type of activity, silt content of the soil, and the weather. In the absence of mitigation, construction activities may result in generating significant quantities of dust, and as a result, local visibility and PM_{10} concentrations may be adversely affected. In addition, the fugitive dust generated by construction would include not only PM_{10}, but also larger particles, which would fall out of the atmosphere within several hundred feet of the construction area and could result in nuisance-type impacts.

Construction activities would also result in the emission of pollutants of concern (ROG, NO_X, and PM_{10} and $PM_{2.5}$) from construction equipment exhaust and construction worker automobile trips. Emission levels for construction activities would vary depending on the number and type of equipment, duration of use, operating schedules, and the number of construction workers. Criteria pollutant emissions of ROG and NO_X from these emission sources would incrementally add to the regional atmospheric loading of ozone precursors during project construction.

For the worst-case day construction scenario, it was assumed that construction of multiple components of the Off-site Water Facilities (e.g., conveyance improvements) could occur simultaneously. The emission estimates for each of the above alternatives is primarily differentiated based on the length of conveyance pipeline construction with all other factors being equal (i.e., worst-case day site preparation for Off-site Water Facility Alternative 1 would be equivalent to the worst-case day site preparation for Off-site Water Facility Alternative 4). Estimated construction-related fugitive dust emissions, as well as exhaust emissions from construction equipment and worker trips are shown in Table 3B.2-1. As shown in Table 3B.2-1, unmitigated emissions of NO_X would exceed the 85 pounds per day significance threshold specified by the SMAQMD in 2011 or 2012 and, therefore, the associated **direct** impact would be **potentially significant**. **No indirect** impact would result. ***[Similar]***

Mitigation Measure 3B.2-1a: Develop and Implement a Construction NO_X Reduction Plan.

Consistent with SMAQMD requirements, the City of Folsom shall provide a plan for demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20% NO_X reduction. Prior to construction, the City's contractor shall submit to the SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during any portion of the construction of the Off-site Water Facilities. The inventory shall include the horsepower rating, engine production year, and projected hours of use or fuel throughput for each piece of equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours prior to the use of subject heavy-duty off-road equipment, the Off-site Water Facilities representative shall provide SMAQMD with the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman.

Table 3B.2-1 Off-site Water Facilities Construction and Operational Emissions				
Off-site Water Facility Alternative	ROG (lb/day)	NO_X (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)
Off-site **Water Facilities Construction**				
No USACE Permit and Proposed Off-site Water Facility Alternative – 2011	25.06	**107.18**	77.38	21.32
No USACE Permit and Proposed Off-site Water Facility Alternative – 2012	234.3	**110.81**	27.55	11.29
Significant Emissions	No	**Yes**	No	No
Off-site Water Facility Alternative 1 – 2011	23.46	**103.38**	76.98	21.02
Off-site Water Facility Alternative 1 – 2012	232.73	**107.01**	27.55	10.99
Significant Emissions	No	**Yes**	No	No
Off-site Water Facility Alternative 1A – 2011	23.26	**102.88**	76.98	21.02
Off-site Water Facility Alternative 1A – 2012	232.53	**106.51**	27.55	10.99
Significant Emissions	No	**Yes**	No	No
Off-site Water Facility Alternative 2 – 2011	14.4	64.6	24.3	8.1
Off-site Water Facility Alternative 2 – 2012	14.4	64.6	24.3	8.1
Significant Emissions	No	No	No	No
Off-site Water Facility Alternative 2A – 2011	20.3	79	25.7	9.4
Off-site Water Facility Alternative 2A – 2012	20.3	79	25.7	9.4
Significant Emissions	No	No	No	No
Off-site Water Facility Alternative 2B – 2011	11	56.1	23.5	7.3
Off-site Water Facility Alternative 2B– 2012	11	56.1	23.5	7.3
Significant Emissions	No	No	No	No
Off-site Water Facility Alternative 3 – 2011	25.86	**109.28**	77.58	21.52
Off-site Water Facility Alternative 3 – 2012	235.13	**112.91**	28.15	11.49
Significant Emissions	No	**Yes**	No	No
Off-site Water Facility Alternative 3A – 2011	24.36	**105.68**	77.18	21.22
Off-site Water Facility Alternative 3A – 2012	233.63	**109.31**	27.75	11.19
Significant Emissions	No	**Yes**	No	No
Off-site Water Facility Alternative 4 – 2011	26.16	**109.98**	77.68	21.62
Off-site Water Facility Alternative 4 – 2012	235.43	**113.61**	25.05	11.59
Significant Emissions	No	**Yes**	No	No
Off-site Water Facility Alternative 4A – 2011	25.56	**108.38**	77.48	21.52
Off-site Water Facility Alternative 4A – 2012	234.83	**112.01**	28.05	11.49
Significant Emissions	No	**Yes**	No	No
Thresholds for Construction Emission	*None*	*85(1)*	*150(2)*	*None*

Note: Calculations were completed using URBEMIS 2007 and SMAQMD, 2007 and are included in Appendix M-VI. The emissions listed above are for a worse-case day, where it was assumed that construction of the conveyance components of the Off-site Water Facilities would overlap with construction of the WTP.

Implementation: City of Folsom Utilities Department

Timing: Prior to construction of the Off-site Water Facilities.

Enforcement:

1. For improvements that would be located within the City of Folsom: City of Folsom Community Development Department and SMAQMD.

2. For improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department and SMAQMD.

3. For improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department and SMAQMD.

Mitigation Measure 3B.2-1b: Conduct Visible Emissions Testing and if Non-Compliance, Repair Equipment Immediately.

Controlling visible emissions from off-road diesel powered equipment. The City shall ensure that emissions from all off-road diesel powered equipment used on the project site do not exceed 40% opacity for more than three minutes in any one hour. Any equipment found to exceed 40% opacity (or Ringelmann 2.0) shall be repaired immediately, and the City and SMAQMD shall be notified within 48 hours of identification of non-compliant equipment. A visual survey of all in-operation equipment shall be made at least monthly, and a quarterly summary of the visual survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey.

Implementation: City of Folsom Utilities Department

Timing: During construction of all Off-site Water Facilities.

Enforcement:

1. For improvements that would be located within the City of Folsom: City of Folsom Community Development Department and SMAQMD.

2. For improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department and SMAQMD.

3. For improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department and SMAQMD.

Mitigation Measure 3B.2-1c: Implement Fugitive Dust Control Measures and a Particulate Matter Monitoring Program during Construction.

The City shall implement fugitive dust control measures and a particulate matter monitoring program during construction. The City shall ensure implementation of dust control measures and a particulate matter monitoring program during each phase of construction. Dust control measures may include, but are not limited to, the following:

- minimize on-site construction vehicle speeds on unpaved surfaces;
- post speed limits;

- suspend grading operations when wind is sufficient to generate visible dust clouds;
- pave, water, use gravel, cover, or spray a dust-control agent on all haul roads;
- Prohibit no open burning of vegetation during project construction;
- Chip or deliver vegetative material to waste-to-energy facilities;
- reestablish vegetation as soon as possible after construction and maintain vegetation consistent with the parameters established in Mitigation Measure 3B.2.1a;
- clean earthmoving construction equipment with water once daily and clean all haul trucks leaving the site; and
- water and keep moist all exposed earth surfaces, graded areas, storage piles, and haul roads at all times.

Implementation: City of Folsom Utilities Department

Timing: During construction of all Off-site Water Facilities.

Enforcement:
1. For improvements that would be located within the City of Folsom: City of Folsom Community Development Department and SMAQMD.
2. For improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department and SMAQMD.
3. For improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department and SMAQMD.

2, 2A, and 2B

The types and sources of construction emissions associated with Off-site Water Facility Alternatives 2, 2A, and 2B would be similar to those identified for the above alternatives; however, no WTP would be constructed under these alternatives. As shown in Table 3B.2-1, construction-related emissions for Off-site Water Facility Alternatives 2, 2A, and 2B is substantially reduced as a result of the reduced length of the conveyance alignment(s) and absence of a new WTP. Based on these differences, Off-site Water Facility Alternatives 2, 2A, and 2B would not generate significant emissions of NO_X or PM_{10} in 2011 or 2012 and, therefore, construction emissions would not exceed SMAQMD thresholds and, therefore, **direct** and **indirect** air quality impacts would be **less than significant**. ***[Lesser]***

Following the application of the prescribed mitigation measures, the City would still be unable to achieve a 20% reduction in NO_X in 2011 or 2012 for the No USACE Permit Alternative, Proposed Off-site Water Facility Alternative, and Off-site Water Facility Alternatives 1, 1A, 3, 3A, 4, and 4A. For this reason, temporary and short-term construction-related impacts to local and regional ozone concentrations would remain **significant and unavoidable** under the No USACE Permit Alternative, Proposed Off-site Water Facility Alternative, and Off-site Water Facility Alternatives 1, 1A, 3, 3A, 4, and 4A because no feasible mitigation is available to fully reduce the impacts to a less-than-significant level.

IMPACT 3B.2-2 Generation of Long-Term Operational (Regional) Emissions of ROG, and NO_X. *Operational area- and mobile-source emissions from implementation of the Off-site Water Facility Alternatives would not exceed the SMAQMD-recommended threshold of 65 lb/day for ROG and NO_X.*

NCP, PA, 1, 1A, 3, 3A, 4, and 4A

Operational emissions for the Off-site Water Facility Alternatives would be generated primarily from on-road vehicular traffic and, to a lesser extent, areas source. Regardless of which siting option is chosen for the WTP, the maximum amount of Off-site Water Facilities-generated traffic on any single day would be up to 40 trips (35 trips related to operation/maintenance of the WTP, 2 trips for chemical/supply deliveries, 2 trips from visitors, and 1 trip related to solids removal). For the pump station facilities, a minor number of employee trips would be required periodically for routine inspection and maintenance. These trips would likely be made by employees at the WTP and, therefore, are assumed to be included within the total 40 daily vehicle trips. As provided in Table 3B.2-2, operational emissions associated with the Off-site Water Facility Alternatives would not exceed the significance thresholds for NO_X or ROG.

Further, since the Off-site Water Facilities lie in an attainment area for CO (concentrations are within the state and Federal ambient standards) and the "Water" Study Area contains relatively low background levels of CO compared to other parts of the Central Valley, it is expected that the indirect impact on CO concentrations would be minimal. For these reasons, implementation of the Off-site Water Facilities would generate only minor quantities of criteria air pollutants over its long-term operation and, therefore, the **direct** and **indirect** impacts would be **less than significant**. ***[Similar]***

Table 3B.2-2
Off-site Water Facilities Construction and Operational Emissions

Off-site Water Facility Alternative	ROG (lb/day)	NO_X (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)
Off-site Water Facilities Operations (WTP) – 2012	4.51	4.25	6.13	1.19
Significant Emissions	No	No	No	No
Thresholds for Operational Emissions	*65*	*65*	*150*	*None*

Note: Calculations were completed using URBEMIS 2007 and are included in Appendix M-VI.
Source: URBEMIS 2007

The water treatment processes at the proposed WTP facility would involve chemical coagulation, flocculation, filtration, disinfection, and the option for ozonation. Chemicals used in these processes would be stored on-site and would include aluminum sulfate, polymers, filter aid polymer, sodium hydroxide, sodium hypochlorite, powdered activated carbon, citric acid, and sodium bisulfite. These chemicals would be stored in tanks, drums, etc. within a designated chemical building, consistent with state and Federal standards. The chemical tank vents would be subject to SMAQMD permitting. Such permits may require scrubbing of air vented from these tanks to remove acid and caustic vapors. If determined necessary, the ozonation process would be subject to SMAQMD review and permitting.

The operation of emergency generators would burn diesel fuel and would generate combustion emissions during operation. However, back-up generators would not be operated under normal conditions and, more limited, up to one hour per week for testing. Because the emergency generators are stationary point sources, they would be subject to review and permitting by SMAQMD. The increased emissions from diesel or gasoline back-up generators are expected to result in **less-than-significant direct** and **indirect** impacts to local and regional air quality. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

2, 2A, and 2B

With the integration into the Vineyard SWTP, either directly or through the Douglas Tanks, no new major sources of operational emissions would be expected. Existing personal at the Vineyard SWTP would likely be sufficient to cover most operational duties and, therefore, only a few new employee vehicle trips, less than 10 total daily trips, would be anticipated over the long-term. Based on this circumstance, long-term emissions of criteria air pollutants would be less than those estimated for the Proposed Off-site Water Facility Alternative and this **direct** and **indirect** impact would be **less than significant**. ***[Lesser]***

Mitigation Measures: No mitigation measures are required.

IMPACT 3B.2-3 Exposure of Sensitive Receptors to Short- and Long-Term Emissions of Toxic Air Contaminants. *Implementation of the Off-site Water Facility Alternatives could expose sensitive receptors to short- and long-term emissions of TACs from on-site stationary sources.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

Construction of the Off-site Water Facility Alternatives would not emit any hazardous air pollutants (HAPs) in any significant quantity other than from large, heavy-duty, diesel-powered equipment exhaust. The OEHHA currently describes the health risk from diesel exhaust entirely in terms of the amount of particulate, or PM_{10}, that is emitted. Currently, the health risk associated with diesel exhaust PM_{10} or diesel particular matter (DPM) only has a carcinogenic and chronic effect; no short-term acute effect is recognized. Off-site Water Facilities construction would be limited in duration, lasting less than three years total, and therefore, no long term, chronic impact would be expected. Further, over the 3-year construction schedule, constructed-generated diesel PM would not be emitted at any single location along the selected pipeline route for an extended period of time. In recognition of these circumstances combined with dust control mitigation prescribed in Mitigation Measure 3B.4-1c, construction of the Off-site Water Facilities would not expose sensitive receptors to substantial pollutant concentration and the **direct** and **indirect** impact is considered **less than significant**. ***[Similar]***

Over the longer term, operational emissions associated with the proposed booster pump station(s) would be generated from the use of pumps and emergency generators. This equipment would operated via electricity under normal operating conditions year around and, under certain situations, under diesel power during emergencies. The operation of diesel engines to pump raw/treated water supplies would contribute to increased air emissions in the areas where these facilities are proposed. As indicated in Section 3B.10, "Land Use and Agricultural Resources – Water," residential uses are planned in areas in close proximity to the White Rock WTP and the Folsom Boulevard WTPs. Similarly, based on the ultimate connection point to the Freeport Project, the booster pump under any of the Off-site Water Facility alternatives could be located in close proximity to existing agricultural residences.

The typical significance threshold for health risk exposure to TACs, including diesel emissions, is 10 cases of cancer per 1,000,000 population over a 70-year exposure period. The diesel PM cancer risk is the probability of an individual developing cancer as a result of exposure to diesel PM. The new booster pump and WTP would be developed and operated in areas within the Central Valley where residential uses are planned or rural residences currently exist. The precise locations of these facilities has not yet been determined, but the anticipated general locations are shown in Exhibits 2-25, 2-26, 2-28, 2-29, 2-30, and 2-31.

The Off-site Water Facilities are expected to cause minimal diesel emissions with fewer than 5 diesel truck trips per day and testing of the emergency generator limited to one-hour intervals on a weekly basis. For these reasons, the WTP and pumping facilities are not expected to substantially increase toxic risks to adjacent receptors.

Further, a recently completed health risk assessment of comparable sources, but at a higher rated treated/pumping capacity, assessed the potential impact of diesel sources operating within 200 feet of nearby residences on a year-round basis (Environmental Science Associates 2007). The study concluded that the impact of the diesel PM emissions would be less than significant because they resulted in a cancer risk of less than 10 cases in a million population. This finding is largely attributed to the highly dispersive nature of diesel PM once emitted. However, without a precise facility location for the booster pump and WTP, the City is unable to confirm that these facilities would be located outside a 200-foot-wide buffer and whether DPM emissions would pose conditions that exceed the previously studied impacts. For this reason, the implementation of Mitigation Measures 3B.2-2a and 2b would be required to reduce the **direct** and **indirect** impacts to a **less-than-significant** level. ***[Similar]***

Mitigation Measure 3B.2-3a: Cite Pump Siting Buffers Away from Sensitive Receptors.

New pumping stations including back-up diesel generators shall be located more than 200 feet away from sensitive receptors. Electrically-powered pumps shall be used to power new pumps, to the extent practicable.

Implementation: City of Folsom Utilities Department

Timing: Prior to the approval of grading plans and building permits for all off-site water pumping facilities.

Enforcement:

1. For improvements that would be located within the City of Folsom: City of Folsom Community Development Department and SMAQMD.
2. For improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department and SMAQMD.
3. For improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department and SMAQMD.

Mitigation Measure 3B.2-3b: Conduct Project-Level DPM Screening and Implement Measures to Reduce Annual DPM to Acceptable Concentrations.

Screening-level DPM assessments shall be conducted for diesel-powered pump operations proposed within 200 feet of residences or other sensitive receptors. These analyses should include exact distances between the receptors and operations, and include the actual DPM emissions for the engines proposed. If the analysis shows an annual average DPM concentration from project operations at residences within 200 feet of the DPM source to be greater than 0.024 $\mu g/m^3$, the engine location shall be moved to a location where the annual average DPM concentration from project emissions at the residences is less than 0.024 $\mu g/m^3$. The acceptable concentration of 0.024 $\mu g/m^3$ was determined using the current OEHHA cancer potency factor and methodology for diesel exhaust (OEHHA 2003). If diesel exhaust concentrations at the affected receptor would be below 0.024 $\mu g/m^3$, then the cancer health risk would be less than 9.9 cancers in a million population.

Implementation: City of Folsom Utilities Department

Timing: Prior to the approval of grading plans and building permits for all off-site water pumping facilities.

Enforcement:

1. For improvements that would be located within the City of Folsom: City of Folsom Community Development Department and SMAQMD.

2. For improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department and SMAQMD.

3. For improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department and SMAQMD.

With implementation of Mitigation Measures 3B.2-3a and 3B.2-3b, air quality impacts to sensitive receptors would be reduce to a **less-than-significant** level because diesel powered pumps and back-up generators would be placed a sufficient distance from sensitive receptors.

IMPACT 3B.2-4 Creation of Objectionable Odors. *The Off-site Water Facilities could create objectionable odors affecting a substantial number of people.*

NCP, PA, 1, 1A, 3, 3A, 4, and 4A

As outlined under SMAQMD's Qualitative Long-Term Emission Thresholds, the types of land use development that pose potential odor problems include agriculture, wastewater treatment plants, food processing and rendering facilities, chemical plants, composting facilities, landfills, transfer stations, and dairies. The implementation of the Off-site Water Facilities does not involve the operation of any of these uses nor would it involve the placement of sensitive receptors in close proximity to one of the above-identified odor-generating uses.

During construction of the Off-site Water Facilities, the various diesel-powered vehicles and equipment in use could create minor odors. These odors are not likely to be noticeable beyond the immediate construction area and, in addition, would be temporary and short-lived in nature as construction progresses. Based on these considerations, **direct** and **indirect** impacts from construction-related odors would be **less than significant**. ***[Similar]***

Operation of the WTP, conveyance, and pumping facilities would involve use of vehicles and/or maintenance equipment when necessary; however, these activities are not expected to generate objectionable odors. Further, pumping operations would be within fully enclosed structures and due to their nature would not result in odor generation. Treatment chemicals used in the water treatment processes would be stored in an enclosed building and would not generate odors off-site. Although water treatment residuals would be generated during the treatment process, these residuals would be mostly inert, containing the particles removed from the raw water (primarily silt and clay) and aluminum hydroxide produced during coagulation. The residuals would be dried on-site in solids drying beds and hauled off-site for disposal. This process would not create objectionable odors that could otherwise affect a substantial number of people and the **direct** and **indirect** impacts are considered **less than significant**. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

2, 2A, and 2B

The discussion provided for the above alternatives would generally apply to Off-site Water Facility Alternatives 2, 2A, and 2B. The main differentiating characteristic between the previously discussed alternatives and Off-site Water Facility Alternatives 2, 2A, and 2B is that these alternatives would not include a new WTP. In this context, **no direct** or **indirect** impacts in relation to odors would be expected under Off-site Water Facility Alternatives 2, 2A, and 2B. ***[Lesser]***

Mitigation Measures: No mitigation measures are required.

3B.2.4 RESIDUAL SIGNIFICANT IMPACTS

Construction of the Off-site Water Facility Alternatives could result in temporary, but significant and unavoidable impacts to air quality through the generation of criteria ozone precursors (e.g., NO_X). Even after the application of mitigation, residual construction-related direct and indirect NO_X impacts would be significant for the No USACE Permit Alternative, Proposed Off-site Water Facility Alternative, and Off-site Water Facility Alternatives 1, 1A, 3, 3A, 4, and 4A. Due to the substantially smaller footprint of the Off-site Water Facilities under Alternatives 2, 2A, and 2B, residual construction-related ozone impacts would be less than significant without mitigation. Only minor quantities of criteria air pollutants would be generated during the operation of all the Off-site Water Facility Alternatives and, therefore, the residual impact would be less than significant with no mitigation required.

This page intentionally left blank.